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Sports Performance

Images depicting human pain increase exercise-induced pain and impair endurance cycling performance

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ABSTRACT

The current study investigated whether viewing images of others in pain influences exercise-induced pain (EIP) and cycling performance. Twenty-one recreational cyclists attended five laboratory visits. The first two visits involved measuring participants' maximal aerobic capacity and familiarized participants to the fixed power (FP) and 16.1 km cycling time trial (TT) tasks. The FP task required participants to cycle at 70% of their maximal aerobic power for 10-minutes. In the subsequent three visits, participants performed the FP and TT tasks after viewing pleasant, painful or neutral images. Participants rated the subset of painful images as more painful than the pleasant and neutral images; with no difference in the pain ratings of the pleasant and neutral images. In the FP task, EIP ratings were higher following painful compared to pleasant images, while no differences in EIP were observed between any other condition . In the TT, performance did not differ between the pleasant and neutral conditions. However, TT performance was reduced after viewing painful images compared to neutral or pleasant images. HR, B[La], perceived exertion and EIP did not differ between the three conditions. These results suggest that viewing painful images decreases TT performance and increases pain during fixed intensity cycling.

Abbreviations: EIP: Exercise Induced Pain; FP: Fixed Power; TT: Time Trial; HR:Heart Rate; B[La]: Blood Lactate; RPE: Rating of Perceived Exertion; IAPS: International Affective Picture System; PO: Power Output

KEYWORDS: Exercise-induced pain compassional hyperalgesia time trial performance empathy

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